

Notice of Allowability

Application No.

09/357,528

Examiner

Kimbinh T. Nguyen

Applicant(s)

ZWERN ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 08/07/03.
2. ☒ The allowed claim(s) is/are 1-38.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☒ to Paper No./Mail Date 10/24/02.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>07/07/05</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Joe Zheng on 07/05/05.

The application has been amended as follows:

Claim 15. (Currently amended) A method for automatically generating a fully-textured 3D model of an object, said method comprising:

receiving from a camera a reference image of a portion of a calibration target having a center for deriving a camera model of said camera, said portion including said center;

detecting said center from said reference image and a pair of end points having a maximum distance, horizontally and vertically, respectively, from said center; and

calculating in a computing device a major axis and a minor axis extending from said center to said pair of end points, respectively.

Allowable Subject Matter

2. Claims 1-38 are allowed.

The following is an examiner's statement of reasons for allowance:

Claims 1 and 18, the prior art does not teach a method and a computer readable medium for automatically generating a fully-textured 3D model of an object, comprising:

generating a 3D region from a sequence of mask images, each of said mask images derived from one of said sequence of images by projecting the object onto a corresponding one of planes positioned virtually surrounding the object; wherein the generation of the 3D region includes a volumetric analysis on the sequence of mask images to determine vertices of the object in a 3D space.

Claims 15 and 32, the prior art does not teach a method for automatically generating a fully-textured 3D model of an object, comprising:

receiving from a camera a reference image of a portion of a calibration target having a center for deriving a camera model of said camera, said portion including said center; detecting said center from said reference image and a pair of end points having a maximum distance, horizontally and vertically, respectively, from said center; and calculating in a computing device a major axis and a minor axis extending from said center to said pair of end points, respectively.

Claim 35, the prior art does not teach a system for automatically generating a fully-textured 3D model of an object, comprising:

a camera positioned within a field of view of the camera viewing from an angle looking down toward, and slightly oblique to the turntable; receiving from the camera a sequence of images taken sequentially and respectively of the object is being rotated by the stepper motor; generating a 3D region from a sequence of mask images, each of said mask images derived from one of said sequence of images by projecting the object

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onto a corresponding one of planes positioned virtually surrounding the object; wherein the generation of the 3D region includes a volumetric analysis on the sequence of mask images to determine vertices of the object in a 3D space.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kimbinh T. Nguyen whose telephone number is (571) 272-7644. The examiner can normally be reached on Monday to Thursday from 7:00 AM to 4:30 PM. The examiner can also be reached on alternate Friday from 7:00 AM to 3:30 PM.

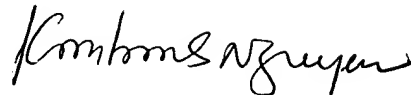
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached at (571) 272-7782. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

July 7, 2005

A handwritten signature in black ink, appearing to read "Kimbinh T. Nguyen". The signature is fluid and cursive, with the first name "Kimbinh" being more prominent than the last name "Nguyen".

KIMBINH T. NGUYEN
PRIMARY EXAMINER